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CENTRAL INTELLIGENCE AGENCY

WASHINGTON, D.C. 20505

25 August 1978

MEMORANDUM FOR: The Director of Central Intelligence

FROM : John N. McMahon  
Deputy Director for Operations

SUBJECT : MILITARY THOUGHT (USSR): Engineer Support  
of a Front Offensive Operation in the  
Initial Period of War

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article is a summation of the proceedings at a military science conference held at the Kuybyshev Military Engineering Academy to discuss key questions of engineer support of a front offensive operation in the initial period of a war. Topics included the purpose of engineer support and the ways of accomplishing it, engineer measures in peacetime, and engineer support for the conduct of an offensive operation. This article appeared in Issue No. 4 (65) for 1962.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned

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## Intelligence Information Special Report

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COUNTRY USSR

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DATE

25 August 1978

SUBJECT

MILITARY THOUGHT (USSR): Engineer Support of a Front  
Offensive Operation in the Initial Period of War

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 4 (65) for 1962 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Colonel V. Andreyev. This article is a summation of the proceedings at the military science conference held at the Military Engineering Academy i/n V. V. Kuybyshev to discuss key questions of engineer support of a front offensive operation in the initial period of a war. The topics discussed at the conference included the purpose of engineer support and the ways of accomplishing it, engineer measures in peacetime, and engineer support for the conduct of an offensive operation.

End of Summary

[REDACTED] Comment:

After 1962 the SECRET version of Military Thought was published three times annually and was distributed down to the level of division commander. It reportedly ceased publication at the end of 1970.

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Engineer Support of a Front Offensive Operation  
in the Initial Period of War

by  
Colonel V. ANDREYEV

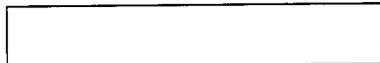
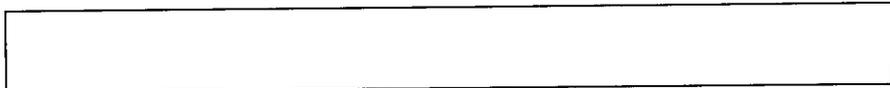
(Based on materials of a military science conference)

A military science conference was held at the Military Engineering Academy i/n V. V. Kuybyshev at which key questions of engineer support of a front offensive operation in the initial period of war were discussed. The chief of the academy, Professor Doctor of Military Sciences Colonel General of Engineer Troops A. D. TSIRLIN, delivered the principal report. In an extension of the report, co-reports were presented: on road support by Candidate of Technical Sciences Engineer Colonel P. P. LESHCHITSKIY, on support for troop actions from the crossing and bridging standpoint by Professor Doctor of Technical Sciences General-Major of Engineer Technical Service S. A. ILYASEVICH, on the employment of obstacles by General-Major of Engineer Troops M. F. IOFFE, on providing for the antinuclear protection of troops by Candidate of Technical Sciences Colonel B. A. MIKHAYLOV, on camouflage measures by Assistant Professor Candidate of Technical Sciences General-Major of Engineer Troops K. F. KISELYEV, and on matters of technical support by Senior Scientific Research Worker, Candidate of Technical Sciences Colonel P. A. PITOCHENKO.

Representatives of the military districts, of the academies of the Ground Forces, and of the central directorates of the Ministry of Defense participated in the work of the conference. In discussing the report and co-reports, greatest attention was devoted to the following topics.

The goal of engineer support and the ways of accomplishing it. Based on the fact that the offensive operations of the initial period of war will be characterized by great spatial scope, exertion in troop combat actions with the frequent occurrence of meeting battles and engagements, the extensive employment of airborne landings, and the negotiation of contaminated and destroyed zones at high rates of speed and to a

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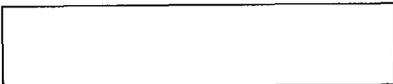
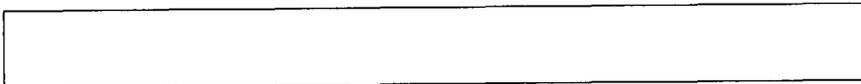
great depth, General TSIRLIN proposed the following definition of the goal of engineer support: Engineer support is organized and carried out for the purpose of creating favorable conditions on the terrain in order to achieve surprise in the conduct of an operation, the timely and concealed deployment of front forces in the border zone, and the conduct by these forces of highly mobile and continuous offensive actions at high rates of speed under conditions of the negotiation of large zones of contamination, destruction, and water obstacles.

In this case, it was emphasized that in operations of the initial period of a war, and based on this goal, protection in the engineer sense against nuclear weapons is required at present, not so much when the troops are in a static situation, as in the course of their actions. In connection with this, it is necessary to determine the nature and sequence of the accomplishment of engineer measures on the march when the troops are advancing at high rates of speed, and also when they are located in some spot for a short period of time.

General TSIRLIN believes that the principal ways of accomplishing the tasks of engineer support must be those of further increasing the readiness of the large units and units of the branch arms to independently fulfil a number of engineer tasks, of taking skilful and rapid actions on the marches and in the attack to negotiate the various obstacles, demolitions, and water obstacles, of correctly exploiting the protective and camouflage characteristics of the terrain, of rapidly digging in when disposed at the halt, and of developing in the engineer troops new methods of accomplishing engineer support tasks at any time of the year or day by using highly efficient and mobile engineer vehicles that are capable of effective operation even on radioactively contaminated terrain.

Regarding engineer measures in peacetime. The conferees expressed the opinion that prior military-engineer preparation of the theaters of military operations, corresponding to the nature of the initial period of a missile/nuclear war, must be carried out for the purpose of ensuring the constant high combat readiness of front troops and of ensuring their deployment and successful conduct of the initial offensive operation. Here, the basis of all the preparations was the engineer preparation of the positions of the on-alert missile units and air defense units as





well as the preparation of the troop movement routes.

In substantiating the necessity of carrying out engineer measures beforehand in a theater of military operations, the lecturer and the speakers pointed out that under present-day conditions, it is difficult to underrate the vast importance which not only axial and lateral lines of transportation have acquired, but also even radial lines of transportation, for the purpose of being able to carry out the rapid bypassing or continuous crossing at high rates of speed of radioactively contaminated zones. That is why the preparation of lines of transportation is one of the key types of preparation of theaters of military operations. Only a road network that has been prepared in a well-thought out manner ahead of time, in combination with railroad transportation, will be able to ensure the timely deployment of the first strategic echelon. For the movement forward of a division operating as part of the first echelon, it is necessary to prepare three to four march routes in a zone not under 20 kilometers; and for an army executing the movement forward from the border military districts, the zone of movement must be designated based on two march routes for each division executing the march in the first echelon.

It will be very important in order to ensure uninterrupted movement on the motor roads and railroads upon the initiation of military operations to have the crossings covered reliably by air defense means and provided with bridging support. Special attention must be devoted to the construction of alternate bridge crossings and to the establishment of reserves of road and bridge structures. It is also very important to increase the survivability of the bridge crossings on the main lines of transportation.

The preparation of the theater of military operations in support of the missile/nuclear means of the ground forces must be carried out in the border zones in such a manner as to ensure they are employed by surprise together with the strategic rocket forces in the initial strike. This can be achieved by reliably protecting these missile/nuclear means against the strikes of enemy nuclear weapons and by supporting the movement of these means. What is contemplated is the reconnoitering of the principal and alternate siting areas, the advance equipping of the siting areas of the on-alert subunits and of the mobile



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missile technical bases and depots for the missiles, and also the preparation of the routes providing for the movement of the missile large units and units out of their permanent locations to previously designated areas and the rapid shifting of these areas in case of necessity.

When selecting the position sites and determining the level of preparation of the siting areas of the missile large units, it is necessary, aside from determining their mutual distance apart, to also take into account the distance separating them from the on-alert assembly areas of the combined-arms large units, the aviation basing areas, the fleet's basing areas on coastal axes, and also from the other front installations which might be subjected to enemy nuclear strikes. For the siting areas of the missile units and large units it is necessary to allocate terrain sectors which have good natural protective features against nuclear attack means, adequate space for concealment, and a well-developed network of motor roads both within the boundaries of the planned areas and also between them.

It was also considered that an important element of the preparation of the theaters of military operations was the prior setting up of a concealed network of control posts and communications centers and lines with the highest degree of protection against nuclear strikes. Command posts, made up of separate dispersed small covered structures of the pit or underground type can be constructed by the forces of the operational formations and large units for which they are intended. In order to rapidly erect the structures, in the control posts there should be established ahead of time reserves of structural components made of reinforced concrete, steel, plywood, and other materials.

Colonel B. A. MIKHAYLOV, in speaking about the fortification equipment of the positions, on-alert assembly areas, and concentration areas for front troops, emphasized that the reliable survivability of troops, and of missile units and large units in particular, can be achieved only by utilizing the entire system of protective measures which includes dispersal, camouflage, frequent changes of location, increasing the resistance of weapons and equipment, reinforcing and making airtight the bodies of the special vehicles covered by a layer of soil in their halting places, pneumatic and fabric-shell portable

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large-span structures, and individual means of protection and digging in. In his opinion, it is particularly important to produce reinforced and airtight bodies for the existing authorized vehicles that are covered by a protective layer of dirt in the halting places and also to further increase the resistance of combat equipment. He spoke out in favor of the introduction of bulldozer attachments for prime movers and tanks, thanks to which troop and missile units and large units, and also control posts, could be very rapidly protected reliably by means of simple digging in, since all transportation means can be used as shelters. Colonel General of Engineer Troops A. F. KHRENOV, General-Major of Engineer Troops G. V. KOREYSH, General-Major of Engineer Troops A. S. ILIN, Engineer Colonel P. M. KUZMIN, and others supported these proposals.

General ILIN pointed out the lack of coordination between the chief armored and engineer directorates on the problems of producing bulldozer attachments for tanks which would perform both the digging in and the roadwork tasks. Appropriate coordination is also lacking among the engineer, road, and railroad troops in the development of bridging means. Specific recommendations are being implemented slowly on the providing of protection, on the development of reconnaissance means, and on the crossing of obstacles. Engineer Colonel KUZMIN commented that in working on the production of mobile control posts, one must not reduce one's attention to the structures erected by the troops themselves out of local materials or from industrially produced components.

Engineer support of the deployment of front forces and means for combat actions. In examining this key problem of a modern front operation, the lecturer and the speakers dwelt in greatest detail on three questions: supporting the combat actions of the forces and means delivering the initial missile/nuclear strike against the enemy, supporting the movement forward and deployment of the front troops, and engineer measures for operational camouflage.

The engineer units of a front and an army must provide the support for the movement forward of the missile units to the siting areas. It was proposed that each division have allocated to it one primary and one or two alternate roads. These roads must not be occupied by other troops.

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The engineer preparation of the rocket troops' siting areas should be carried out by their own organic engineer-combat engineer subunits. In so doing, the top priority work is that of preparing the battalion and brigade control posts, the waiting areas and transshipment points of the missiles, and also camouflage.

To provide for the movement forward and deployment of front troops, each unit and large unit must have march routes subordinated to it and reconnoitered ahead of time, its time of movement must be specified, and the provost and traffic control service and traffic regulation must be organized. The organic engineer units and subunits of the large units moving up provide the direct support for the movement forward.

The engineer troops subordinated to the armies and front are charged: with maintaining the principal march routes for the movement forward of the rocket troops, the second echelons and reserves, and the field headquarters of the front and armies; with providing alternate bridges on the major rivers; and also with providing for the crossing of the areas of destruction formed as a result of nuclear strikes. In this case, due to the limited availability at this time of engineer troops in a front for the maintenance of roads and bridges, all local road and bridge building organizations in the rear area of the front will have to be called upon.

Much attention was devoted at the conference to engineer measures for operational camouflage. It was pointed out that together with the skilful and extensive utilization of the camouflage characteristics of the terrain, it was necessary to combine the measures to conceal the troops in the on-alert assembly areas or on the march with simulated regroupings, with diversionary actions, and with the setting up of dummy troop concentration areas.

The camouflaging of missile units must be initiated long before the development of military actions by establishing dummy groupings of rocket and surface-to-air missile troops and by preparing dummy siting areas and by simulating in them the dispositions of these units and subunits. In order to conceal the on-duty missile means, it was proposed to have three to four

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sites for them, all prepared to the same degree and one word illegible. The shifting among these sites is to be carried out according to a special schedule.

General K. F. KISELYEV drew the attention of the conferees to a number of measures which, if not carried out, make it impossible to successfully accomplish the tasks of engineer support for operational camouflage. Among these are: working out the instructions for the camouflaging and preparation of the on-alert assembly areas and the concentration areas for the units and large units in constant combat readiness; adopting effective measures for the most rapid and successful development of industrially manufactured high-quality mock-ups of missile equipment of all types and of dummy bridges; intensifying the work to develop equipment for remotely controlling the mock-ups and simulation devices, establishing reserves of camouflage nets, mock-ups, and corner reflectors in the engineer depots of the border military districts and the groups of forces; ensuring the smoke screening by chemical defense units of the major river crossings; incorporating camouflage subunits into the T/O&E of the engineer-combat engineer and engineer-construction brigades of the front as it is considered that the organic camouflage subunits of the missile large units will not carry out tasks of simulation; incorporating specialists on camouflage in the engineer directorate of the military district staff (engineer troop staff of the front) and specialists-camouflagers in all missile large units and in the particularly important installations.

Engineer support for the conduct of an offensive operation. The primary purpose of engineer support in this period is to cooperate with the troops in exploiting in the shortest time possible the results of our initial nuclear strike and in attaining a high rate of advance during the entire operation. In this connection, at the conference major attention was devoted to engineer support for the high rates of advance of front troops, which includes measures to lay down routes, to cross or bypass zones of destruction and radioactive contamination, and to construct crossings when making assault crossings of water obstacles.

In this case, the conferees stressed that providing the troops with routes in the course of combat actions cannot be performed solely by the front's engineer and road troops.

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Technical problems (preparing roads) are not the only ones involved here, but also operational problems -- leading the troops and delivering materiel. Therefore, these tasks must be accomplished by the combined efforts of all branch arms and special troops.

Important problems of engineer support for an operation are the timely preparation of a network of roads for the maneuvering and actions of the troops, for the concentration of reserves from the interior of the country, and also for supply and evacuation. The engineer and road troops of the front will be the principal executors of these tasks. The engineer troops develop the front's basic road network on the regrouping and maneuvering axes of the troops to that extent as will permit the troops to accomplish marches at high rates of speed and over wide zones. The road troops, exploiting the work done by the first-echelon engineer troops, repair, maintain, and perform the dispatching and provost and traffic control service on a relatively limited number of the primary and monitored roads in the zone of the front and the armies.

The success of an offensive will be determined greatly by the capability of the front's engineer and road units and large units to prepare the routes at high rates of speed and of the troops to independently negotiate terrain sectors that are difficult to traverse.

When repairing routes for the first-echelon divisions one should extensively employ industrially manufactured road and bridge structures which are repeatedly utilized during the operation. Immediately behind the first-echelon divisions the roads should be continuously transferred by the engineer troops to the road troops of the military transportation directorates.

To remove obstacles on the roads in the zones of radioactive contamination it is necessary to call upon the engineer vehicles having a tank chassis, as these best protect combat engineers from contamination. The movement support detachments should include subunits with tank bridgelayers, bulldozer equipment on tanks, and mine-clearing tank attachments. For engineer support in crossing zones of radioactive contamination and destruction it is extremely important to have available a grouping of engineer troops that would be able to accomplish all tasks based on the

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possible relief of the engineer troops (in case their irradiation is greater than the norm), and also to provide for the dropping by helicopters of individual subunits in the role of special-purpose movement support detachments so as to accomplish in the contaminated zone the most labor-consuming work -- restoring bridges, setting up crossings, constructing passages in large barriers and obstructions, etc.

The conferees were of the opinion that it has become vitally necessary for engineer units to have road equipment (including some to reconnoiter mixed minefields) that protects crews from radioactive contamination when the radiation levels range from 150 to 200 roentgens per hour. To do this, it is necessary, in the case of the presently available engineer vehicles based on tanks and on heavy artillery prime movers, to develop a special protective layer (lining) in the cabs for the crews, and in the new vehicles, to develop hermetically-sealed bodies and cabs (with an air seal against the penetration of contaminated air), and to use heat-resistant and heat-insulating materials and paints. The time has come to develop engineer vehicles with remote controls for the purpose of working in these zones with high levels of radiation whose bypassing is impossible or inexpedient.

Engineer Colonel P. P. LESHCHITSKIY believes that the task which is most difficult to accomplish is that of having the troops negotiate narrow obstacles. To successfully accomplish it, he suggested the development still in peacetime of lightweight design bridge structures to be industrially manufactured, their concentration on the principal operational axes, and then subsequent supplying to the divisions during the combat actions.

In examining the problems of assault crossings of water obstacles, the conferees said that only the integrated employment of amphibious combat and transportation equipment, of engineer crossing means, of attachments to increase the fording mobility of wheeled and tracked vehicles, and of devices for driving tanks underwater and for making the crossings afloat, as well as the capture, mine-clearing, and utilization of available bridges and local crossing means (barges, ferries) will make it possible to negotiate water obstacles in the course of an offensive operation carried out at high rates of speed.

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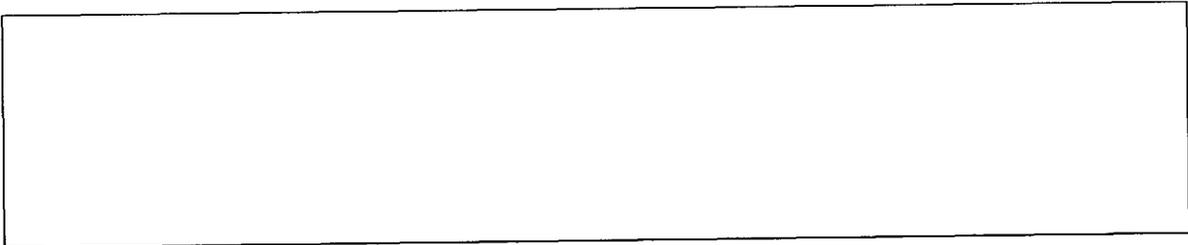


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The question of the combat employment of the engineer troops subordinated to an army and front was also discussed at the conference. The opinion was expressed that when an operation is being prepared, they should be employed in a centralized manner but that upon the initiation of combat actions, the greater part of the engineer units of a front and of the reserves of the Supreme High Command should be attached to the first-echelon armies and to the rocket troops for the purpose of reinforcing their independence in the engineer sense.

In a number of talks, the conferees pointed out the discrepancy between the T/O&E of engineer units and the tasks which they fulfil (General-Mayor of Engineer Troops KOREYSH) and between the overall T/O&E of engineer troops and of the engineer service and the tasks this service performs on the scale of the armed forces (Colonel General of Engineer Troops KHRENOV).

Marshal of Engineer Troops A. I. PROSHLYAKOV was the concluding speaker of the conference. He drew the attention of those gathered to the necessity of the further and thorough working out of the methods of fulfilling the principal tasks of engineer support: the continuous development and maintenance of the road network that supports the deployment of troops of the fronts and the movement to the theaters of military operations of the reserves of the Supreme High Command; the further improvement of the methods of the assault crossing of water obstacles from the march, especially the organizing of the movement of the pontoon bridge and assault crossing units, and the skilful utilization of bridge crossings depending on the situation; and the working out of engineer measures for operational camouflage and of measures to eliminate the aftereffects of nuclear strikes.



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Supporting crossings with the exploitation of the entire modern arsenal of means is the duty of engineer troops, regardless of who designs and manufactures these crossing means; under all conditions the shifting of these means will be of decisive importance. The use of military transport aviation for this purpose holds great future promise.

The lecturer and the speakers pointed out that the most complex matter in organizing engineer support for the assault crossing of water obstacles at the present time is not so much the direct crossing of the troops as the providing for the rapid and organized coming out on a broad front to the water obstacle along separate axes and the uninterrupted development of the offensive on the opposite bank. The reasons for this result from a certain lag in the development of the road vehicles and bridging means that are part of the engineer troop equipment and also from the low cross-country capability of the combat and transport vehicles that are in service.

General-Major S. A. ILYASEVICH raised the question of the extreme need for the immediate and timely development and procurement of the table of equipment bridge structures which must be located on the principal operational axes and which must serve as the basic means for the rapid erection of bridge crossings during an operation, especially in the operations of the initial period of a war. In his opinion, these structures must primarily be made out of glued plywood and approximately one-third of them must be made of metal. In addition, it is necessary to set up backup stocks of glued plywood pontoons which will make it possible to support an army during the war with stocks made out of non-critical materials and to economize on metal.

General ILYASEVICH believes that the basic direction in the further development of the pontoon and bridge inventory is in establishing self-propelled stocks made up of integrated self-propelled units, each of which combines not only a floating pier, the components of the span structure and its carriageway, but also the means of transportation. Generals KHRENOV, VINSKIY, and KOREYSH, and Colonel TOLCHINSKIY and others also spoke about this.

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